

teeth may be only a sexual character; but they are so similar to the differences that I observed in the skulls of the Dolphins sent from Liverpool that came from different localities, and had such a different system of coloration, that I am inclined to regard them as distinct for the purpose of attracting attention to them, and in the hope that Mr. Layard, or some naturalist in the southern hemisphere, may obtain a series of specimens, and be able to study the question in more detail.

The shorter-beaked species of *Clymene* are chiefly known from *Lagenorhynchus* by the convexity of the upper surface of the beak, and of the intermaxilla above that surface.

8. On some new or imperfectly known Fishes of India.

By FRANCIS DAY, F.Z.S., F.L.S., &c.

ACANTHOPTERYGII.

BERYCIDÆ.

RHYNCHICHTHYS ORNATUS, sp. nov.

D. $12\frac{1}{6}$. P. 15. V. $1\frac{1}{6}$. A. $4\frac{1}{9}$. C. 15. L. l. 36. L. tr. $3\frac{1}{2}\frac{1}{6}$.

Length of specimen $1\frac{5}{10}$ inch.

Length of head $\frac{1}{3}$, of pectoral $\frac{1}{5}$, of base of dorsal spines $\frac{1}{3}$, of base of dorsal rays $\frac{1}{10}$, of base of anal $\frac{1}{7}$, of caudal $\frac{1}{6}$ of the total length. Height of head $\frac{1}{4}$, of body $\frac{1}{3}$, of dorsal spines $\frac{1}{6}$, of dorsal rays $\frac{1}{7}$, of ventral $\frac{1}{6}$, of anal spines $\frac{1}{6}$, of anal rays $\frac{1}{10}$ of the total length.

Eyes. Large, circular, diameter $\frac{2}{9}$ of length of head, rather above $\frac{1}{2}$ a diameter from end of snout, nearly 1 diameter apart.

Appearance percid; the dorsal profile much more convex than the abdominal, which is nearly horizontal from the lower surface of the snout to the inferior margin of the caudal fin.

Mouth below, posterior to the produced and pointed snout. The posterior extremity of the maxilla extends to beneath the centre of the orbit; it is hidden by the præorbital. Præoperculum, its vertical limb with fine but distantly placed serrations; a large and strong spine extends from its angle to the base of the pectoral fin; its horizontal limb strongly denticulated, as is also the lower margin of the interoperculum. Operculum with two spines, the upper the largest, its lower margin denticulated. Præorbital and shoulder-bones serrated. The upper surface of the head roughened by raised longitudinal ridges.

Teeth. Villiform in jaws, vomer, and palatines.

Fins. Dorsal fins connected; spines moderately strong, the second the longest, whence they decrease to the last; interspinous membrane deeply cleft. Pectoral rounded. Ventral arises a little distance posterior to the pectoral, its spine being equal to the second of the dorsal fin in length. Third anal spine longest and strongest, the first very minute. Caudal slightly lobed.

Scales cover the body, and form a partial sheath to the dorsal and anal fins, but there are none on the top of the head. They are strongly ctenoid and in parallel rows.

Lateral line in single tubes, following the curve of the back in the upper fourth of the body.

Colours. Bluish silvery along the back and sides, and rosy along the abdomen. Fins yellowish; dorsal orange; spines black. The interspinous membrane between the first three dorsal spines and also between the sixth and last is deep black.

A single specimen captured at Madras, June 6th, 1867.

PERCIDÆ.

MESOPRION CHIRTAH, Cuv. & Val.

B. vii. D. 11/14. P. 17. V. 1/5. A. 3/9. C. 17. L. 1. 55.
L. tr. 10/25.

Length of specimens from $11\frac{8}{10}$ to 16 inches.

Length of head $\frac{2}{7}$, of pectoral $\frac{1}{4}$, of base of dorsal spines $\frac{2}{7}$, of base of dorsal rays $\frac{1}{5}$, of base of anal $\frac{1}{7}$, of caudal $\frac{2}{9}$ of the total length. Height of head $\frac{1}{4}$, of dorsal spines $\frac{1}{8}$, of dorsal rays $\frac{1}{6}$, of ventral $\frac{1}{6}$, of anal $\frac{1}{6}$ of the total length.

Eyes. Upper margin $\frac{1}{4}$ of diameter from the profile; diameter $\frac{2}{9}$ of length of head, 1 diameter apart, $1\frac{1}{2}$ diameter from end of snout.

Posterior extremity of maxilla extends to nearly beneath the anterior extremity of the orbit. Præoperculum slightly emarginate, smooth superiorly and serrated inferiorly, whilst the posterior portion of its vertical limb has some widely separated denticulations.

Teeth. An external row of conical teeth in the upper jaw, and several rows of villiform ones posterior to it; the same in the lower jaw, except that the villiform ones are only in its central portion. Villiform in vomer and palate.

Dorsal spines weak, the fourth the longest. First anal spine a little above one-third the length of the second, which is much the strongest, but not quite so long as the third. Caudal broad and slightly emarginate.

Colours. Uniform bright rose-colour, with an orange tinge. All the fins have a slightly dark stain at their margins.

Hab. Common in Madras.

I have been so fortunate as to obtain numerous specimens of this fish, from the very young to the adult, and have no hesitation in asserting that the *M. annularis*, C. & V., is the young of this species, and the *M. malabaricus* the semiadult.

Before describing the specimens, it will be necessary to offer a few remarks upon what has been written respecting these fish. Russell was the original observer of the *M. chirtah*, which he figures in his 'Fishes of Vizagapatam;' his specimen was 13 inches long. Dr. Jerdon omits the *M. chirtah* from amongst the list of his fishes of Madras, but states that the *M. annularis* is one of the commonest of the tribe there. Dr. Günther rejects the *M. chirtah*, but remarks that the *M. malabaricus* is perhaps a variety of the *M. annularis*.

The numbers of spines, rays, and scales of the three are identical, whilst the difference in proportion is only such as might be due to age, sex, and accidental circumstances.

The general coloration of these three species is scarlet, with a more or less purplish gloss. In a number of specimens from $2\frac{6}{10}$ inches to 16 inches in length the following variations in colour were noticed.

In the smallest there is a dark mark along the base of the dorsal fin, commencing at the opercles, and a black band across the back, just anterior to the root of the tail, on either side of which and extending over the back it has a white edge. In a specimen a little larger the colours are the same, except that there is a dark line along each row of scales. At $7\frac{3}{10}$ inches in length the band across the back before the tail is still very distinct, but it does not extend quite so far down the sides, and its light edges are not so visible. At $8\frac{2}{10}$ inches the white edging has almost gone. At 9 inches, in one specimen, there is only a very indistinct dark bar across the back; it has, in fact, become the *M. malabaricus*, whilst at $11\frac{8}{10}$ it has assumed the full scarlet colours of the *M. chirtah*. At 16 inches in length the scarlet colours are not so vivid, and the fins are slightly darker than in the young.

MULLIDÆ.

UPENEOIDES FASCIOLATUS, sp. nov.

D. $7\frac{1}{7}$. P. 15. V. $1\frac{1}{5}$. A. $2\frac{1}{5}$. C. 15. L. 1. 36. L. tr. $2\frac{1}{2}\frac{1}{6}$.

Length of specimen 3 inches.

Length of head $\frac{1}{4}$, of pectoral $\frac{1}{6}$, of caudal $\frac{1}{6}$, of base of first dorsal $\frac{2}{15}$, of base of second dorsal $\frac{1}{12}$, of base of anal $\frac{1}{12}$ of the total length. Height of head $\frac{1}{6}$, of body $\frac{1}{4}$, of first dorsal $\frac{1}{6}$, of second dorsal $\frac{1}{10}$, of ventral $\frac{2}{15}$, of anal $\frac{1}{10}$ of the total length.

Eyes. Upper margin near the profile; diameter $\frac{2}{7}$ of length of head, 1 diameter from end of snout, 1 diameter apart.

Profile of head rounded.

Posterior extremity of maxilla reaches to beneath the anterior third of the orbital. Interorbital space concave, having a longitudinal groove down its centre. The barbels reach to opposite to the posterior margin of the orbit.

Teeth in several villiform rows in both jaws, and in an uninterrupted semilunar band in vomer and palate.

Fins. Second spine of first dorsal the highest, six rows of scales between the end of first dorsal and commencement of second dorsal. Origin of anal in a line slightly posterior to the origin of the second dorsal. Ventrals reach about halfway to the anus. Caudal deeply forked.

Scales ctenoid over body, cheeks, and head, also over commencement of caudal, besides which there are some minute scales between rays of the second dorsal, anal, and caudal fins.

Lateral line in arborescent form on each scale.

Air-bladder absent.

Colours. Of a reddish chestnut along the back, becoming silvery

along the abdomen. A brilliant golden stripe, two-thirds as wide as a scale, passes from the orbit to the upper third of the tail. Pectoral flesh-coloured. Ventral and anal yellow. Caudal reddish, without bands, tipped with black which is externally edged with white. First dorsal milk-white, edged with black; two horizontal yellow lines along it, which are dotted with very fine black points. Second dorsal milk-white, tipped with black, having one curved horizontal line of yellow, dotted with black points along its centre.

Hab. Madras, in the sea, November 1867.

GOBIUS MADRASPATENSIS, sp. nov.

D. $6\frac{1}{9}$. P. 17. V. $1\frac{1}{5}$. A. 9. C. 13. L. l. 27. L. tr. 11.

Length of three specimens from $2\frac{9}{10}$ to 3 inches. Length of head $\frac{1}{5}$, of pectoral $\frac{1}{6}$, of caudal $\frac{1}{6}$, of base of first dorsal $\frac{1}{7}$, of base of second dorsal $\frac{1}{5}$, of base of anal $\frac{1}{6}$ of the total length. Height of head $\frac{1}{6}$, of body $\frac{1}{4}$, of first dorsal $\frac{1}{9}$, of second dorsal $\frac{1}{7}$, of ventral $\frac{1}{6}$, of anal $\frac{1}{7}$ of the total length.

Eyes. Upper margin near the profile; diameter $\frac{1}{4}$ of length of head, $\frac{2}{3}$ of a diameter from end of snout, $\frac{1}{4}$ of a diameter apart.

Cleft of mouth rather oblique, lower jaw the longest, the posterior extremity of the maxilla extending to beneath the anterior margin of the orbit.

Teeth. In several closely set villiform bands in both jaws, with an external somewhat enlarged row in the upper, and also in the anterior half of the lower jaw, having externally a large recurved canine tooth, which is rather nearer the symphysis than the angle of the mouth.

Fins. Dorsal spines flexible, the first with a short filamentous extremity; none of the pectoral rays silk-like. Caudal rounded.

Scales. Finely ctenoid, scarcely lineated; they extend forward to the posterior margin of the orbit, and are smaller on the nape than on the rest of the body. There are seven horizontal rows between the origin of the second dorsal and that of the anal.

Colours. Olivaceous, with irregular brownish ill-defined blotches and dots. From five to eight very fine vertical black lines pass downwards from the back to the abdomen, commencing opposite to the base of the ventral, and ending opposite to the middle of the anal, giving the first the appearance of being banded.

Fins greyish; first dorsal with two rows of dark blotches, second dorsal irregularly blotched and dotted. Pectoral and anal unspotted. Ventral tipped with black. Caudal minutely dotted in rows.

Hab. Backwaters in Madras, probably will be found in the sea; is not a freshwater species.

GOBIUS NEILLI, sp. nov.

D. $6\frac{1}{8}$. P. 15. V. $\frac{1}{5}$. A. 9. C. 13. L. l. 28. L. tr. 9.

Length of specimens from $1\frac{5}{10}$ to $3\frac{2}{10}$ inches.

Length of head $\frac{2}{7}$, of pectoral $\frac{1}{6}$, of caudal $\frac{1}{5}$, of base of first dorsal $\frac{1}{8}$, of base of second dorsal $\frac{1}{5}$, of base of anal $\frac{1}{5}$ of the

total length. Height of head $\frac{1}{6}$, of body $\frac{1}{4}$, of first dorsal $\frac{1}{3}$, of second dorsal $\frac{1}{5}$, of anal $\frac{1}{6}$, of ventral $\frac{1}{5}$ of the total length.

Eyes directed upwards and slightly outwards, diameter $\frac{2}{7}$ of length of head, nearly 1 diameter from end of snout, and less than $\frac{1}{4}$ of a diameter apart.

Body somewhat compressed. Head as broad as high.

The posterior extremity of the maxilla extends to beneath the anterior third of the orbit. Cheeks somewhat swollen. Horizontal margin of præoperculum rather longer than the vertical.

Teeth in fine villiform rows in both jaws, and having in the lower jaw an external recurved series, the outer one of which on either side is nearly as large again as the others, and curved outwards and slightly backwards; it is situated nearer to the angle of the mouth than the centre of the jaw.

Fins. First dorsal spines flexible, prolonged, and in the adult a long filamentous termination to the second spine, which, however, is not elongated in the young. Pectoral somewhat pointed, none of its rays silk-like. Ventral reaches to the commencement of the anal. Caudal somewhat pointed.

Scales finely ctenoid, with striæ converging posteriorly. Seven horizontal rows between the bases of the second dorsal and anal anteriorly, and nine between the end of the dorsal and the base of the caudal.

Colours. In the adult pale ochreous, becoming of a dirty-white colour on the abdomen. Upper surface of head, cheeks, and superior two-thirds of the body covered with various-sized rusty-brown dots of irregular shapes, and which form oblique vertical bands on the cheeks and opercles. Pectoral and ventral unspotted, but with a deep greyish edge. First dorsal with a deep-black mark between the first and fifth spine at about half the height of the fin, which above is of a canary-yellow colour, and the ends of the spines black; between the fourth spine and the end of the fin are deep-brown spots. Second dorsal edged externally with brown, and having a yellow band with a black base dividing it from the lower $\frac{3}{4}$ of the fin, which is spotted with light brown. Anal yellow, edged with black in its external half. Caudal barred with eight or nine rows of chestnut spots.

In the young the dorsal fins are spotted with brown, and the black mark in the first dorsal does not generally show itself until the fish is above 2 inches long. Pectoral, ventral, and anal yellow, without any markings.

This very pretty little Goby, which I have named after my friend A. C. B. Neill, Esq., F.Z.S., is not uncommon in the backwaters and along the sea-shore.

The *G. neilli* is allied to the *G. criniger*, C. & V., from which it differs in several points, amongst which are that in the former the neck is scaled $\frac{3}{4}$ of the distance between the base of the first dorsal and the orbits, whilst in the *G. criniger* this part is scaleless.

In the *G. neilli* there is an external enlarged row of teeth in the lower jaw, the external of which is much larger than the others, and

recurved as seen in the *G. venenatus*, *G. viridipunctatus*, and other allied species; but in the *G. criniger* "ses dents sont petites, même les extérieures" (Cuv. & Val). "The teeth are minute, velvety, of nearly equal length" (Cantor). "Teeth small" (Günther).

GOBIUS BIOCELLATUS, C. & V.

Gobius subtilus, Cantor.

D. $6\frac{1}{3}$. P. 19. V. $\frac{1}{3}$. A. $\frac{1}{8}$. C. 15. L. l. 35-38. L. tr. 13.

Length of specimens from 1 to 4 inches.

Length of head $\frac{1}{4}$, of pectoral $\frac{1}{6}$, of caudal $\frac{1}{6}$, of base of first dorsal $\frac{1}{8}$, of base of second dorsal $\frac{1}{6}$, of base of anal $\frac{1}{8}$ of the total length. Height of head $\frac{1}{6}$, of body $\frac{1}{5}$, of first dorsal $\frac{1}{8}$, of second dorsal $\frac{1}{6}$, of anal $\frac{1}{6}$, of ventral $\frac{1}{7}$ of the total length.

Eyes directed upwards and slightly outwards; horizontal diameter $\frac{1}{5}$ of length of head, $\frac{3}{4}$ of a diameter apart, 1 diameter from end of snout.

Teeth villiform in both jaws, except an external slightly enlarged row in the lower jaw, those in which are considerably recurved inwards. A few of those in the outer row in the upper jaw are slightly enlarged.

Fins. First dorsal generally highest anteriorly; but in some specimens the fifth spine is somewhat the longest.

Colours. These vary, generally greyish brown, with some large irregular blotches along the side, and a slight brownish line along the centre of each row of scales. Under surface of cheeks and jaws lined with circuitous brownish lines. Cheeks dark brownish.

Fins. Dorsal generally yellowish, with a greyish tinge, and having several irregular whitish lines along its lower half, also a deep-black blotch with a white margin usually between its fifth and sixth spines. Second dorsal of the same colour, with several rows of irregular white spots. Pectoral, ventral, and anal greyish, the last with some white dots. Caudal dark grey, with some lines of dark spots.

Cantor observes that *G. subtilus* chiefly differs from *G. biocellatus*, C. & V., in its dentition; but I have fortunately obtained a large number of specimens at Madras, and find that the dentition of the two is identical. His other diagnostic sign, namely the filamentous fifth spine of the first dorsal, is accidental in the specimen and by no means uncommon.

One very curious diseased specimen of this species was captured November 15, 1867; it is covered with large, hard tubercles over its body and the base of its fins, also over its tongue.

PHARYNGOGNATHI ACANTHOPTERYGII.

PSEUDOSCARUS RUSSELLII, Cuv. & Val.

D. 9/10. P. 15. V. 1/5. A. 2/9. C. 13. L. l. 24. L. tr. $\frac{2\frac{1}{2}}{7}$.

Length of specimen 18 inches.

Length of head $\frac{1}{4}$, of pectoral $\frac{1}{6}$, of base of hard dorsal $\frac{1}{4}$, of base of dorsal rays $\frac{1}{5}$, of base of anal nearly $\frac{1}{5}$, of caudal $\frac{1}{7}$ of the total length. Height of head $\frac{1}{5}$, of body $\frac{2}{7}$, of dorsal spines $\frac{1}{4}$, of dorsal rays $\frac{1}{11}$, of ventral $\frac{1}{7}$, of anal spines $\frac{1}{6}$, of anal rays $\frac{1}{10}$ of the total length.

Eyes. Upper margins near the profile; diameter $\frac{1}{5}$ of length of head, 2 diameters from end of snout and anterior extremity of teeth, $1\frac{1}{2}$ diameter apart.

Teeth. Two in either jaw; their inferior edges slightly serrated.

Fins. Dorsal spines nearly as high as the rays. Pectoral moderately rounded. Ventral pointed. Caudal cut nearly square.

Lateral line proceeds straight to beneath middle of dorsal rays, then curves slightly downwards for two scales; anterior to this termination, and beneath the eighth dorsal ray, the lateral line is continued along the middle of the side to the tail. The last two scales of the upper branch of the lateral line are above the two first of its lower branch.

Air-bladder rather thick.

Colours. Sea-green, each scale, except those on the chest, having a reddish semilunar-shaped base, equal to about half its width. The scales between the base of the ventral and anal fins reddish. Head rosy. Eye hazel, with a few short blue lines radiating from its lower margin; anteriorly one passes to the upper margin of the tip, which it encircles. Dorsal fin bluish green, edged with light blue; an irregular reddish line extends along its centre, another passes along its base, and a third below its blue edge. Caudal reddish, with four or five irregularly vertical bluish-green bands. Anal of a lightish blue. Pectoral and ventral reddish, the outer ray blue.

This description is taken from a female specimen which was captured at Madras on July 12th, 1867.

It is said by the fishermen to be very rarely met with.

SILURIDÆ.

SILURUS PUNCTATUS, sp. nov.

B. xii. D. 5. P. $\frac{1}{10}$. V. 8. A. 58-62. C. 19.

Length of specimens from 4 to $8\frac{1}{10}$ inches.

Length of head $\frac{1}{7}$, of pectoral fin $\frac{1}{10}$, of base of dorsal $\frac{1}{8}$, of base of anal $\frac{1}{2}$, of caudal $\frac{1}{10}$ of the total length. Height of head $\frac{1}{3}$, of body $\frac{1}{8}$, of dorsal fin $\frac{1}{6}$, of ventral $\frac{1}{6}$, of anal $\frac{1}{3}$ of the total length.

Eyes small, their covering continuous with the skin of the head; they are situated above the level of the angle of the mouth, $2\frac{1}{2}$ to 3 diameters from the end of the snout, and 5 diameters apart.

Head wide, depressed; neck not elevated, upper profile of head horizontal. Body strongly compressed.

Mouth wide, cleft narrow; posterior extremity of the upper jaw extends to beneath the posterior extremity of the orbit. Lower jaw elevated at its centre, and slightly shorter than the upper. Crown

of head smooth, covered by skin. Nostrils some distance apart, the anterior between the orbit and the snout, and covered by a thick strong cirrus, which reaches to $\frac{3}{4}$ the length of the pectoral fin. Mandibular cirri situated one anterior to the other, at a distance equalling the diameter of the orbit; both of them extend nearly as far as the base of the pectoral fin. Gill-openings wide, central cleft extends to above the isthmus.

Teeth. Numerous rows of fine sharp villiform ones in both jaws, and two oval patches, one on each side of the vomer, divided by a small interspace. None on the palate.

Fins. Dorsal small, without any spine, situated anterior to the origin of the ventral; no adipose dorsal. Pectoral with a very short but strong spine, ending in a short termination. Ventrals extend to the origin of the anal, which last is slightly joined to the caudal, the latter being rounded or rather emarginate.

Air-bladder present.

Lateral line straight, ceasing just anterior to the base of the caudal fin.

Colours. Leaden, becoming purplish beneath, covered all over with minute black points, which form an irregular dark finger-mark on the shoulder. Caudal in some specimens yellowish.

Mr. Burnett was good enough to send me several specimens of this interesting fish, which he captured in the Wynaad, in a stream about 3000 feet above the level of the sea. Some were full of ova. The fish does not appear to grow above 12 inches in length.

February 27, 1868.

Dr. J. E. Gray, F.R.S., V.P., in the Chair.

The following extract was read from a letter addressed to the Secretary, by Mr. W. G. Blanford, Corr. Memb., dated "Annesley Bay, Feb. 3rd:"—

"I have got *Pectinator spekei*, or else a second species of the same genus. It abounds up the passes, living amongst the rocks, and it is, without exception, the most tender-skinned mammal I ever tried to preserve. It is rather a pretty little beast, fond of lying out on lumps of rock, and feeding upon green leaves, though I have never seen one on a tree. It is constantly out in the morning and evening, but I fancy it only feeds at night.

"I have also two species of *Hyrax* (one from the passes, a second from the shores of Annesley Bay), a species of Ground-Squirrel (*Xerus*), which does not agree in colour with any of those described in Dr. Gray's list, and a few other things. The Jackal is quite different